

P A T E N T

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Heegard et al.

Application No.:

Filed: Herewith

For: **PHASE-LOCKED LOOP INITIALIZATION VIA CURVE-FITTING**

**DRAWING REVIEW BRANCH**  
Commissioner for Patents  
Washington, D.C. 20231

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as Express Mail (No. EL 626667918 US) addressed to BOX PATENT APPLICATION, Commissioner for Patents, Washington, D.C. 20231 on March 15, 2001.

By: Michele Hollis  
Michele Hollis

TRANSMITTAL OF FORMAL DRAWINGS

Dear Sir:

Enclosed are eight (8) sheets of formal drawings for filing in the above-referenced patent application.

Please advise Applicants' attorney if correction is necessary.

Respectfully submitted,

Date: March 15, 2001  
**ATTORNEY DOCKET NO.: ALA-111**

Barry R. Lipsitz  
Barry R. Lipsitz  
Registration No. 28,637  
755 Main Street, Building 8  
Monroe, CT 06468  
(203) 459-0200

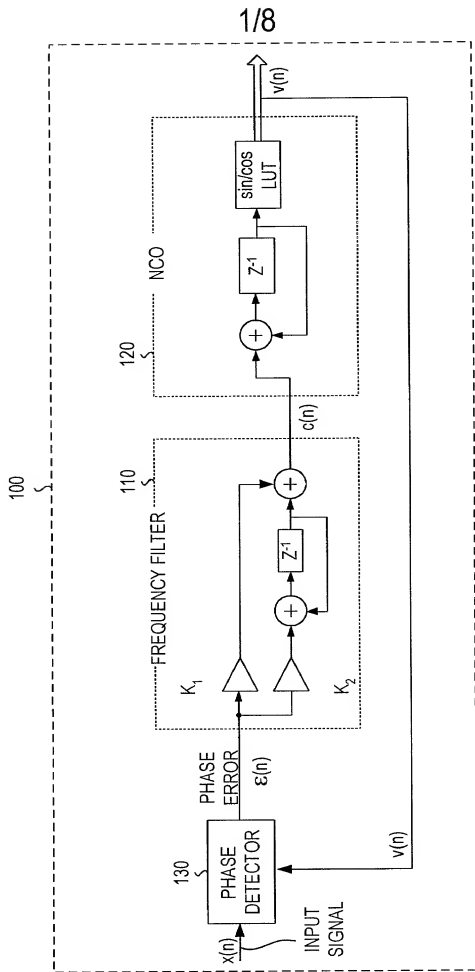


FIG. 1 (PRIOR ART)

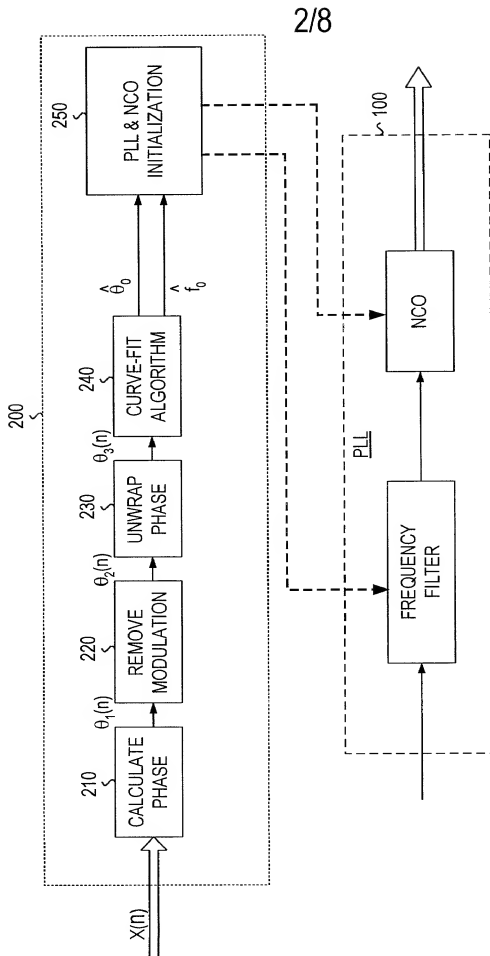
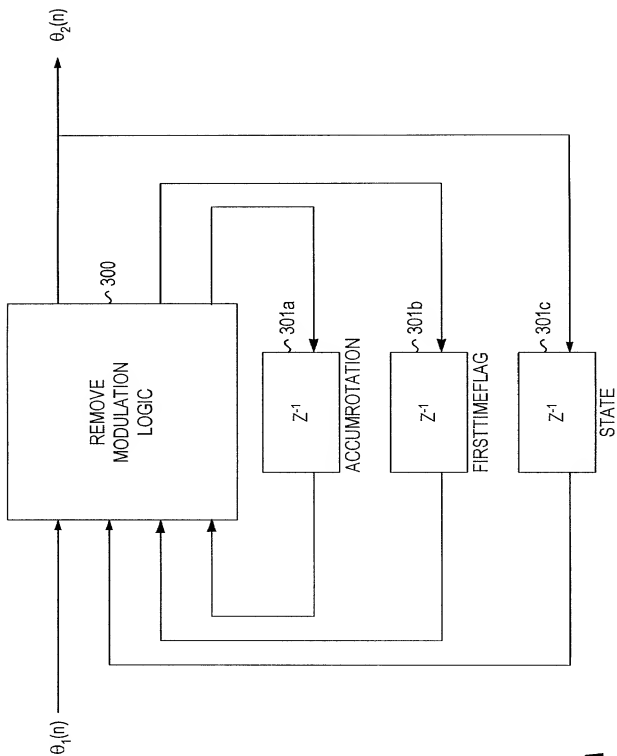


FIG. 2



4/8

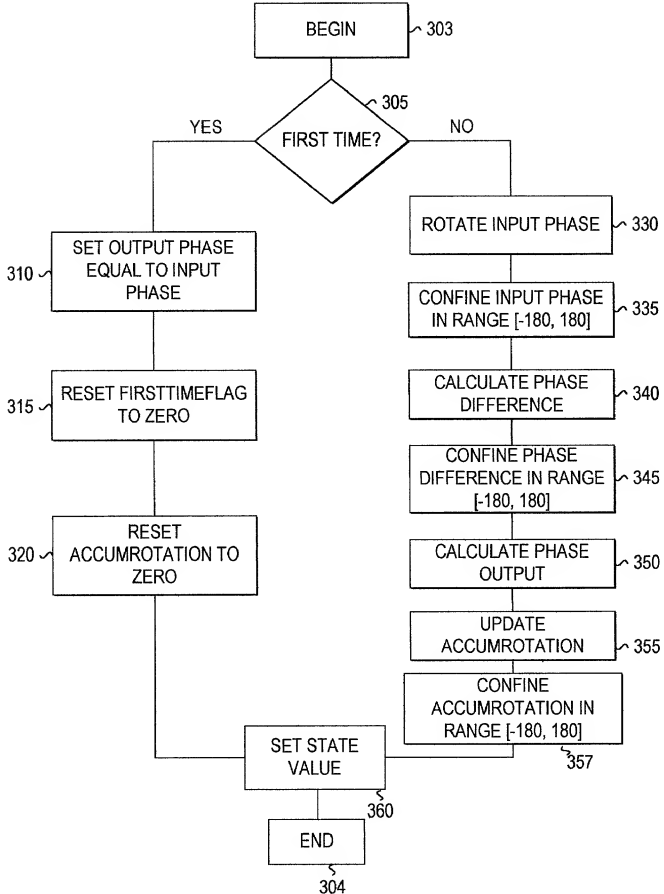


FIG. 3B

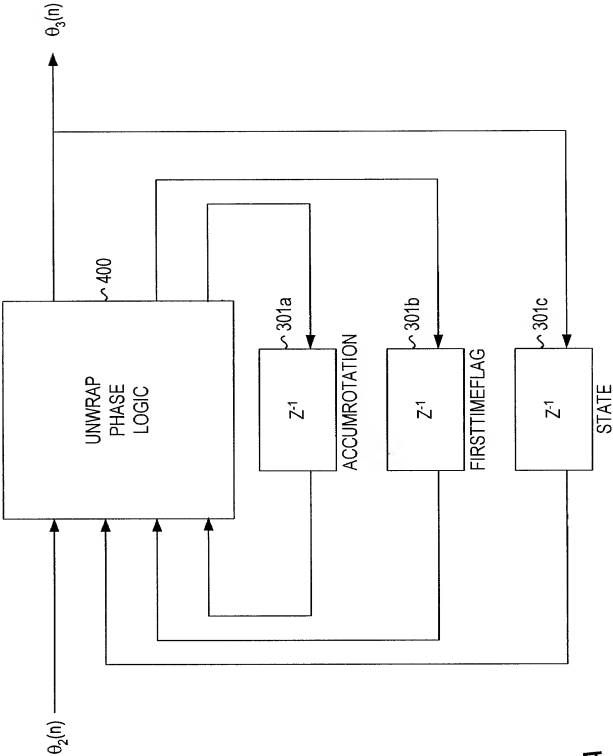


FIG. 4A

6/8

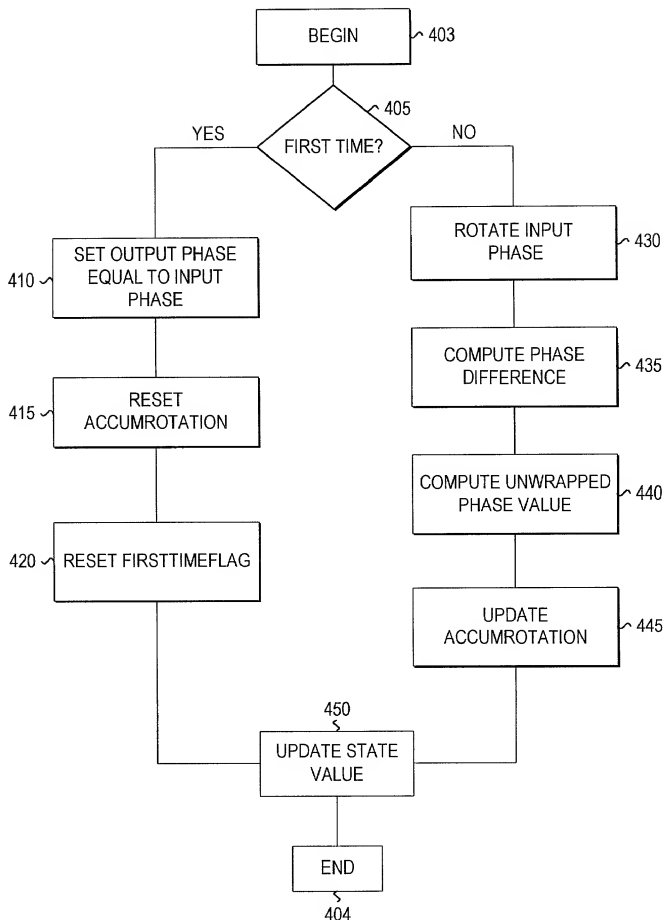


FIG. 4B

500  
Σ

502 Σ	504 Σ	506 Σ	508 Σ	510 Σ	512 Σ
TRANSMITTED BITS	TRANSMITTED CONSTELLATION POINT	RECEIVED CONSTELLATION POINT	$\theta_1$ (DEG)	$\theta_2$ (DEG)	$\theta_3$ (DEG)
0	$1+j$	$0.707+0.707j$	45	45	45
1	$-1+j$	$0-j$	-90	90	90
0	$1+j$	$0.707(-1+j)$	135	135	135
0	$1+j$	$-1+j$	180	180	180
1	$-1+j$	$0.707(1+j)$	45	-135	225
0	$1+j$	$0-j$	-90	-90	270

FIG. 5



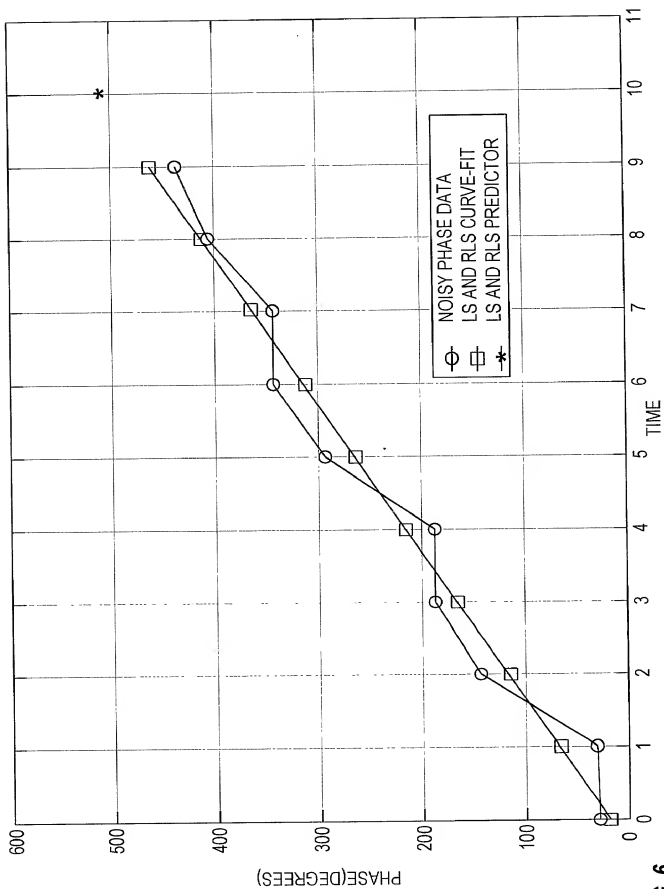


FIG. 6